TRANSMITTAL OF APPEAL BRIEF

Docket No.
NY-LUD 5253-US5-DIV

In re Application of: Thierry Boon-Falleur et al.

Application No.	Filing Date	Examiner	Group Art Unit
08/819,669-Conf. #1995	March 17, 1997	P. Gambel	1644

Invention: TUMOR REJECTION, ANTIGEN PRECURSORS, TUMOR REJECTION ANTIGEN S AND USES THEREOF

TO THE COMMISSIONER OF PATENTS:

Transmitted herewith is the Appeal Brief in this application, with respect to the Notice of Appeal filed: August 3, 2007 .

The fee for filing this Appeal Brief is $ 510.00 .

[x] Large Entity [ ] Small Entity

[x] A petition for extension of time is also enclosed.

The fee for the extension of time is $ 1,640.00 .

[ ] A check in the amount of _____ is enclosed.

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Norman D. Hanson Dated: 1/10/08

Norman D. Hanson
Attorney Reg. No. : 30,946
FULBRIGHT & JAWORSKI L.L.P.
666 Fifth Avenue
New York, New York 10103
(212) 318-3168

Appeal Brief Transmittal

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the U.S. Postal Service as Express Mail, Airbill No. EM 155746571 US, on the date shown below in an envelope addressed to:
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Dated: 1/10/08 Signature: Fani Malikouzakis (Fani Malikouzakis)

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Dated: 1/10/08 Signature: Fani Malikouzakis
(Fani Malikouzakis)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Thierry Boon-Falleur et al.

Application No.: 08/819,669 Confirmation No.: 1995

Filed: March 17, 1997 Art Unit: 1644

For: TUMOR REJECTION, ANTIGEN PRECURSORS, TUMOR REJECTION ANTIGEN S AND USES THEREOF Examiner: P. Gambel

APPEAL BRIEF (37 C.F.R. § 41.37)

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Pursuant to 37 C.F.R. § 41.37, Applicants appeal from the rejection dated February 6, 2007.

Applicants claims have been rejected more than twice, so appeal is proper.

As required under 37 C.F.R. § 41.37(a), this brief is filed more than two months after the Notice of Appeal filed in this case on August 3, 2007. Hence, a 4-month extension of time is required, and a request therefore accompanies this Brief on Appeal with authorization to charge our Deposit Account.

IT IS NOTED THAT THIS APPLICATION HAS BEEN MADE SPECIAL VIA PETITION PREVIOUSLY, AND RETAINS THAT STATUS. FURTHER, ANY APPLICATIONS PENDING MORE THAN 5 YEARS MUST BE TREATED AS SPECIAL.

The fees required under 37 C.F.R. § 41.20(b)(2), and any required petition for extension of time for filing this brief and fees therefor, are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

This brief contains items under the following headings as required by 37 C.F.R. § 41.37 and M.P.E.P. § 1206:

I. Real Party In Interest
II Related Appeals and Interferences
III. Status of Claims
IV. Status of Amendments
V. Summary of Claimed Subject Matter
VI. Summary of Issues
VII. Grouping of Claims
VIII. Argument
Appendix - Listing of Claims on Appeal

I REAL PARTY IN INTEREST

The Real Party in Interest is Ludwig Institute for Cancer Research, the Assignee of the subject application.

II RELATED APPEALS AND INTERFERENCES

The subject application was appealed previously obn June 7, 2006. The Board of Patent Appeals REVERSED the Examiner, and remanded for further proceedings not related to the rejection at issue herein.

III STATUS OF CLAIMS

Claims 183-191 are pending and have been rejected. A copy of pending claims 183-191 is appended hereto.

Claims 1-182 have been canceled.

IV STATUS OF AMENDMENTS

All amendments have been entered. None are currently pending.

V SUMMARY OF CLAIMED SUBJECT MATTER

The invention, which is the subject matter of the claims on appeal, is a family of proteins known as the MAGE tumor rejection antigen precursors. The acronym "TRAP" is used to refer to "tumor rejection antigen precursor," and will be used hereafter.

TRAPs are described in brief at page 6, lines 19-26 of the specification. TRAPs constitute a family of proteins which are expressed in tumor cells but not in normal cells*.

The TRAPs are processed, intracellularly, to generate small peptides, known as tumor rejection antigens, or "TRAs." TRAs are described at page 4, line 19 – page 5, line 14 of the specification. Briefly, the TRAs form complexes with MHC molecules, such as HLA molecules, with the resulting complexes forming a target for recognition by cytolytic T cells, i.e., "CTLs." Upon recognition of a complex of a TRA and an MHC molecule, the CTLs are stimulated to proliferate, and lyse the cell which present the TRA/MHC complex. See page 4, line 26 – page 5, line 3 of the specification.

Unquestionably, there are several types of molecules which are characteristic of cancer cells. For example, page 2, lines 1-22 of the specification refers to TSTAs, which are molecules produced when cells are mutated via chemical processes.

A second family of molecules characteristic of cancer cells are the "tum$^-$" antigens, which are discussed at page 3, in its entirety. The tum$^-$ antigens and TSTAs differ from TRAPs, however. Page 5, last two lines, through page 6, line 18 of the specification, explain how TRAPs and TRAs are NOT the product of mutagenesis. See page 6, lines 1-2, for example.

Due to their expression in tumor cells, and lack of expression in normal cells, TRAPs serve as "markers" for cancer cells, in at least two ways. First, their presence indicates with almost complete certainty that the cell expressing the molecule is a cancer cell. In the isolated case of testis cells, it is well known that these lack MHC molecules,

* Subsequent to the invention, it was found that testis cells express TRAPs, but do not present tumor rejection antigens.

so TRAs cannot be presented by these cells, and thus a T cell proliferative response is not possible.

With respect to the subject invention, an exhaustive set of experiments were carried out, leading to the identification of the first member of the MAGE family, i.e., MAGE-1. Examples 17-22, over pages 33-41 discuss the characteristics.

Additional TRAPs were identified in these experiments, as is elaborated upon in example 23, at pages 41-42. This example also explains the derivation of the name MAGE.

Examples 24-28 characterize these molecules further, and discuss the close relationships amongst MAGE-1, 2, and 3.

The fact that these three MAGE TRAPs, i.e., MAGE-1, 2, and 3, were part of a larger family, is discussed in experiments set forth at page 29, including Southern Blotting. At page 47, the definition of stringent conditions recited in the claims is provided.

Example 30 describes the isolation and characterization of MAGE-4. Example 31, that of MAGE-5. Example 32 discusses MAGE-6, and example 33, the isolation of MAGE-7, 8, 9, 10, and 11.

All of these molecules were isolated and characterized using the conditions set forth in the claims. From the above referenced disclosure, one can list the following characteristics of MAGE TRAPs:

(i) they are proteins that are encoded by naturally occurring, non-mutagenized genes;

(ii) they are characteristic of cancer cells, and are not expressed by normal cells (with the exception of testes cells);

(iii) they are all encoded by nucleic acid molecules which hybridize to a reference sequence, i.e., one which

encodes MAGE-1 (SEQ ID NO: 8), under strictly defined, stringent conditions, and,

(iv) they are processed, intracellularly, into TRAs, i.e., peptides, which complex to MHC molecules to form targets for CTLs.

The present specification describes one TRA, which is a peptide that results from intracellular processing to form a complex with HLA-A1 molecules. This TRA consists of SEQ ID NO: 26. Example 34 describes the identification of this TRA. The TRA was patented in the parent application, i.e., U.S. Patent No. 5,925,729. Claims 184, 187 and 190 all require this peptide to be present as part of the claimed TRAP molecule.

A later filed application issued as U.S. Patent No. 5,405,940, describing and claiming TRAs from additional MAGE TRAPs, i.e., MAGE-2 – MAGE-6.

The peptides of the '729 patent and the '940 patent form complexes with HLA-A1 molecules; however, additional TRAs have been found within the MAGE TRAPs, which form complexes with different MHC molecules.

VI SUMMARY OF ISSUES

Did the Examiner err in rejecting all of pending claims 183-191 under 35 U.S.C. § 102(f) in view of U.S. Patent No. 5,843,448 to Chen, et al.?

It is Appellant's contention that the Examiner did err.

VII GROUPING OF CLAIMS

Claims 183-191 are grouped together for purposes of this appeal.

VIII ARGUMENT

The subject application claims priority to a "string" of previously filed applications. In a paper dated September 12, 2006, the Examiner acknowledged that the application was entitled to the priority of application 07/807,043, filed December 12, 1991. The Examiner stated that:

> "(T)he instant disclosure has nearly the same disclosure (except for corrected SEQ ID NOS: 7 and 8)."

"Corrected SEQ ID NOS: 7 and 8 refer to nucleotide sequences that were corrected in a reissue of the patent which issued from 07/807,043.

In the aforementioned September 12, 2006 Communication, the Examiner indicated that the claims were allowable, but suspended prosecution "for determination of a possible interference."

The Examiner then re-opened prosecution and entered new rejections.

It is noted that the Examiner has done this THREE TIMES! Prosecution ahs been drawn out for 11 years. It is time that it ended, hence Appellants present what they hope will be their final appeal.

The pending rejection is based upon 35 U.S.C. § 102(f), and the Examiner alleges that the pending claims are unpatentable under 35 U.S.C. § 102(f) in view of U.S. Patent No. 5,843,448 to Chen, et al.

The statute relied upon by the Examiner, i.e., 35 U.S.C. § 102(f), states as follows:

> "A person shall be entitled to a patent unless:
>
> (f) he did not himself invent the subject matter sought to be patented."

The patent relied upon by the Examiner, i.e., the '448 Patent, alleges the same priority claim as do Appellants. The application under consideration was actually filed prior to the application leading to the '448 Patent. It was pointed out in Appellants

communication of November 19, 2007, that the '448 Patent is in fact a continuation-in-part of the subject application.

As both the subject application and the '448 Patent claim priority to application 07/807,043, it is believed helpful to compare both inventorship and specifications:

A. **Inventorship**

Application At Issue	07/807,043	5,843,448
Boon	Boon	Boon
Van der Bruggen	Van der Bruggen	Van der Bruggen
Van den Eynde	Van den Eynde	Chen
Van Pel	Van Pel	Stockert
De Plaen	De Plaen	Garin-Chesa
Lurquin	Lurquin	Rettig
Chomez	Chomez	Old
Traversari	Traversari	

It will be seen that there is complete unity of inventorship between the priority application and the subject application, whereas there are but two inventors in common between the '448 Patent and the priority application. The priority application clearly discloses the proteins that are the subject of the present claims.

As has been admitted by the Examiner, there is nearly complete identity of disclosure between the subject application and the priority application.

Such is not the case with respect to the '448 Patent. Indeed, comparison of the texts will show that the only communication between '448 and the priority application is the BACKGROUND AND PRIOR ART section.

These facts have been developed in detail because, ultimately they must be decisive in determining whether the rejection under 35 U.S.C. § 102(f).

As Appellants have pointed out, case law interpreting 35 U.S.C. § 102(f) is fairly sparse. Ex parte Kusko states, however:

> "where an applicant by oath or declaration states that he is the sole inventor of a particular invention, strong evidence is required to reach a contrary conclusion."

Kusko at 974. As was also pointed out previously, the Board, in Kusko, held that while 35 U.S.C. § 102(f) does not include references to dates of invention or relative timing:

> "Nevertheless it is clear that most, if not all, determinations under § 102(f) involve the question of whether one party derived an invention from another and the relative dates of the events in question are important and are considered in deciding such issues."

The Examiner has brushed aside this precedent, stating that Kusko

> "addressed the rejection under 35 U.S.C. § 102(f) based upon a publication, the evidence relied upon herein is U.S. Patent No. 5,843,448, including the claims of this patent."

Appellants find no distinction made in 35 U.S.C. § 102(f) between patents and publications, and ask for the Examiner to point out where the statute makes this distinction. Nor do Appellants understand why the Examiner feels a need to reiterate that the '448 patent is presumed valid. It is asked that the Examiner point out where validity was challenged.

Nor do Appellants understand why the Examiner states that they appear to have ignored the claims of the '448 Patent.

The issue raised by the Examiner is one under 35 U.S.C. § 102(f). Such requires consideration of the entire document, not only the claims. It appears that the Examiner is

still attempting to set up an interference having failed in 3 attempts, which would require consideration of the claims in much greater detail.

Appellants have already pointed out that U.S. Patent No. 5,843,448 was found to be patentable over U.S. Patent No. 5,342,774, which is the patent that issued from 07/807,043, i.e., the priority application. Since '448 enjoys a presumption of validity, it must be deemed to claim something not disclosed in '774. And since '774 has been held by the Examiner to be essentially identical to the subject application, '448 and the current application contain distinct and different disclosures.

Appellants have made of record a non-precedential opinion, i.e., Ex part Nishioka, 1995 WL1768442 (Bd. Pat. App. & Int.), and do so again. Appellants did not, and do not suggest that Nishioka is binding precedent; however, as was pointed out previously, the framework is useful for analysis and, as the Board has deemed it non-precedential, one must conclude that what Nishioka states is in fact governing law, as determined by prior precedent. A lack of co-extensive disclosure between '448 and the present application coupled with the earlier filing date of the current application, lead to the conclusion that a rejection under 35 U.S.C. § 102(f) is not proper.

Appellants have also pointed out that the Chen '448 patent concedes the subject matter of the claims under consideration here. Please see column 3, lines 28-35, of the '448 Patent referring, *inter* alia to the parent of the subject application as prior art. Example 1 does refer to a parent application, i.e., the current application, as showing expression of MAGE-1. The Examiner's comments on this are obscure, but appear to evidence a challenge to the statement.

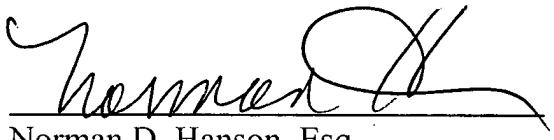
Appellants simply reiterate that the document "says what it says." In the close of '448, at columns 7-8 the patent speaks of the invention as relating to monoclonal antibodies, and recombinant MAGE-1. Recombinant MAGE-1 is described as being different from the molecule as being isolated via non-recombinant means. Note that '448 provides no disclosure on the isolation of MAGE-1 via non-recombination means, clearly

evidencing a species of invention, i.e., recombinant MAGE-1, which is not the same invention as is claimed herein.

It is submitted that when all of the facts, and all of the evidence are considered, as well as the cited cases, it will be seen that the current rejection cannot be maintained, and should be REVERSED.

Respectfully submitted,

FULBRIGHT & JAWORSKI, L.L.P.



Norman D. Hanson, Esq.
Registration No. 30,946

666 Fifth Avenue
New York, NY 10103
(212) 318-3000
(212) 318-3400 (fax)

APPENDIX
LISTING OF CLAIMS ON APPEAL

183. An isolated, MAGE tumor rejection antigen precursor protein, wherein said protein is encoded by a nucleic acid molecule, the complementary sequence of which hybridizes to SEQ ID NO: 8 at 0.1xSSC, 0.1% SDS, wherein said tumor rejection antigen precursor is obtainable from melanoma cells.

184. The isolated tumor rejection antigen precursor protein of claim 183, the amino acid sequence of which comprises the amino acid sequence set forth in SEQ ID NO: 26.

185. The isolated tumor rejection antigen precursor protein of claim 183, wherein said protein is a human protein.

186. Composition comprising the isolated tumor rejection antigen precursor protein of claim 183, and a pharmaceutically appropriate ingredient.

187. Composition comprising the isolated tumor rejection antigen precursor protein of claim 184, and a pharmaceutically appropriate ingredient.

188. Composition comprising the isolated tumor rejection antigen precursor protein of claim 185, and a pharmaceutically appropriate ingredient.

189. The composition of claim 186, in the form of a vaccine.

190. The composition of claim 187, in the form of a vaccine.

191. The composition of claim 188, in the form of a vaccine.